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| 10/519,899 | 08/22/2005 | Xiangjun Wang | 29610/CDT334 | 2716 |

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EXAMINER

ZIMMERMAN, JOSHUA D

ART UNIT PAPER NUMBER

2854

DATE MAILED: 11/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/519,899

Applicant(s)

WANG, XIANGJUN

Examiner

Joshua D. Zimmerman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-6,8-11,13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6,8-11,13 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/14/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 4, 5, 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Hammond Cunningham et al. (US 2004/0086709).

3. Regarding claim 1, Hammond Cunningham et al. teach “a method for patterning a device layer using a patterned stamp, comprising the steps of:

(a) providing a substrate (paragraph 61, paragraph 64 line 14);

(b) bringing the patterned stamp into contact with the substrate (this is an inherent part of the stamping process of paragraph 64, line 13);

(c) removing the patterned stamp from the substrate (this is an inherent part of the stampings process of paragraph 64, line 13);

(d) depositing a solution of a device layer on the substrate after the patterned stamp has been removed (paragraph 64, lines 14-17); whereby the surface energy of the substrate determines the deposition pattern of the device layer (last two sentences of paragraph 5; first and last sentences of paragraph 8)

wherein step (b) is carried out so that the surface energy of the substrate is modified in accordance with the pattern (paragraph 64, lines 14-17)."

Regarding claim 4, while Hammond Cunningham et al. do not specifically discuss the effects of the stamping process on the topography of the surface of the substrate, one having ordinary skill in the art would recognize that the topography is inherently not changed by the stamping process of Hammond Cunningham et al. since it is only used to chemically modify the surface of the stamp, and not physically change the surface of the substrate.

Regarding claim 5, Hammond Cunningham et al. further teach "depositing the device layer by spin coating or inkjet printing (paragraph 73)."

Regarding claim 8, Hammond Cunningham et al. further teach "wherein in step (b) the surface energy in step (b) of any portion of the surface of the substrate that is in contact with the pattern stamp is modified (last two sentences of paragraph 5; first and last sentences of paragraph 8; paragraph 64, lines 14-17)."

Regarding claim 9, Hammond Cunningham et al. teach that, in one embodiment, a polystyrene substrate can be used (paragraph 63).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond Cunningham et al. in view of AAPA.

Regarding claim 6, Hammond Cunningham et al. fail to specifically teach the type of solvent used. However, AAPA teaches that when depositing light emitting polymers, a non-polar solvent is used (paragraph 56). Therefore, it would have been obvious to one having ordinary skill in the art to use a solvent "selected from the group consisting of xylene, ortho-xylene, toluene, benzene, mesitylene, chloroform, dichloromethane, and mixtures thereof" in order to effectively deposit a light-emitting polymer onto the substrate.

6. Claim 9 is alternately rejected, and claims 10 and 11 are rejected, under 35 U.S.C. 103(a) as being unpatentable over Hammond Cunningham et al.

Regarding claim 9, Hammond Cunningham et al. teach that, in one embodiment, a polystyrene substrate can be used (paragraph 63). However, Hammond Cunningham et al. fail to teach the use of the specific polymer as claimed in claim 10. However, Hammond Cunningham et al. teach an alternate embodiment wherein patterned conducting polymer films are created, "wherein the substrate comprises a polymer (paragraph 72)," and, regarding claim 10, "wherein the polymer is poly (3,4-

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ethylenedioxythiophene) or polyaniline (paragraph 72).” It would have been obvious to one of ordinary skill in the art at the time of the invention to use the alternate method of Hammond Cunningham et al. in order to create a patterned conducting polymer film, such as an OLED.

Regarding claim 11, Hammond Cunningham et al. further teach “wherein the substrate is charged (paragraph 72, paragraph 113).”

7. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond Cunningham et al., as applied to claim 1 above, in view of Bearinger et al. (US 2003/0215723).

Regarding claim 13, Hammond Cunningham et al. teach all that is claimed, but fail to teach “ wherein the patterned stamp is used as a mask in step (b) and step (b) includes subjecting any portion of the surface of the substrate that is not in contact with the patterned stamp to a surface energy modifying process.” However, Bearinger et al. teach a method of patterning a surface by exposing the surface through a stamp, while said stamp is in contact with the surface, in order to modify the surface for patterning (paragraphs 27 and 28).” Therefore, it would have been obvious to one having ordinary skill in the art to use the method of Bearinger et al. in the method of Hammond Cunningham et al. in order to modify the surface of the substrate so it could be patterned.

Regarding claim 14, Bearinger et al. further teach “wherein the surface energy modifying process includes a step of exposing any portion of the surface of the substrate that is not in contact with the patterned stamp to UV radiation (paragraph 28).”

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Zimmerman whose telephone number is 571-272-2749. The examiner can normally be reached on M-R 8:30A - 6:00P, Alternate Fridays 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua D Zimmerman
Examiner
Art Unit 2854

jdz



REN YAN
PRIMARY EXAMINER